



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,903	01/11/2001	Ulrich Peuchert	NHL-SCT-21 US	8419

432 7590 08/11/2003

NILS H. LJUNGMAN & ASSOCIATES  
P. O. BOX 130  
GREENSBURG, PA 15601-0130

EXAMINER
----------

BOLDEN, ELIZABETH A

ART UNIT	PAPER NUMBER
----------	--------------

1755

15

DATE MAILED: 08/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/758,903

Applicant(s)

PEUCHERT ET AL.

Examiner

Elizabeth A. Bolden

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 61-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 61-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

Art Unit: 1755

### DETAILED ACTION

Any rejections and or objections, made in the previous Office Action, and not repeated below, are hereby withdrawn.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 61-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peuchert et al., U.S. 6,417,124.

Peuchert et al. teach an alkali-free aluminoborosilicate comprising 50-70 wt% SiO<sub>2</sub>, 0.5-15 wt% B<sub>2</sub>O<sub>3</sub>, 10-25 Al<sub>2</sub>O<sub>3</sub>, 0-10 wt% MgO, 0-10 wt% CaO, 0-12 wt% SrO, 0-15 wt% BaO, 0-10 wt% ZnO, 0-5 wt% ZrO<sub>2</sub>, 0-5 wt% TiO<sub>2</sub>, 0-2 SnO<sub>2</sub>, and 0.05-2 MoO<sub>3</sub>. See abstract of Peuchert et al. The reference teaches that the glass can be used as a substrate for thin film transistors, active matrix liquid crystal displays, and plasma addressed liquid crystals. See column 1, lines 6-11. The reference teaches that glasses for the above applications have high thermal shock resistance, high transparency over a broad spectral range (UV and VIS), and a density equal to or lower than 2.6 g/cm<sup>3</sup>. See column 1, lines 11-16. The reference teaches that the glasses can be produced by the float glass method, which produces streak-free substrates with low surface undulations. See column 1, lines 25-30. The reference teaches that the glasses are

Art Unit: 1755

free from  $\text{As}_2\text{O}_3$  and  $\text{Sb}_2\text{O}_3$ . See column 5, lines 41-49. The reference teaches that the  $T_g$  is greater than  $650^\circ\text{C}$ . See column 7, line 46. The reference teaches that the viscosity at  $10^4$  is less than  $1330^\circ\text{C}$ . See column 7, lines 49-51. The reference further teaches that the thermal expansion coefficient is from  $2.8 \times 10^{-6}/\text{K}$  to  $5.0 \times 10^{-6}/\text{K}$ . See column 8, lines 43-44. The reference teaches that the viscosity at  $10^2$  is less than  $1702^\circ\text{C}$ . See the Table.

Peuchert et al. differ from the instant claims by not teaching specific examples that lie within the compositional ranges nor ranges of glass components which are sufficiently specific to anticipate the claim limitations. However, the compositional ranges and the property ranges of Peuchert et al. overlap the compositional and property ranges of claims 61-80. Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the ranges of Peuchert et al. because overlapping ranges have been held to establish prima facie obviousness.

Claims 64, 69-73, 75, and 78-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lautenschläger et al., U.S. Patent 6,465,381.

Lautenschläger et al. teach an alkali-free glass consisting of  $>60$ - $65$  wt%  $\text{SiO}_2$ ,  $6.5$ - $9.5$  wt%  $\text{B}_2\text{O}_3$ ,  $14$ - $21$  wt%  $\text{Al}_2\text{O}_3$ ,  $1$ - $8$  wt%  $\text{MgO}$ ,  $1$ - $6$  wt%  $\text{CaO}$ ,  $1$ - $9$  wt%  $\text{SrO}$ ,  $0.1$ - $3.5$  wt%  $\text{BaO}$ ,  $0.1$ - $1.5$  wt%  $\text{ZrO}_2$ ,  $0.1$ - $1$  wt%  $\text{SnO}_2$ ,  $0.1$ - $1$  wt%  $\text{TiO}_2$  and  $0.001$ - $1$  wt%  $\text{CeO}_2$ . See abstract of Lautenschläger et al. Lautenschläger et al. teach that glass can be used as a substrate for display technologies. See Abstract of Lautenschläger et al. The reference teaches that the glasses used for display technologies have the following properties: coefficient of thermal expansion from  $3.0$  to  $3.8 \times 10^{-6}$

Art Unit: 1755

$^6/K$ ,  $T_g$  from 710-780 °C, a density less than or equal to 2.5 g/cm<sup>3</sup>, and free from visual defects such as inclusions, knots, and bubbles. See column 1, lines 35-67. Lautenschläger et al. teach the viscosity at  $10^4$  for the glass composition is from 1260-1320 °C. See column 4, lines 64-65. Lautenschläger et al. teach that the glass can be produced with the above mentioned properties by the float glass or draw methods. See column 4, lines 41-52. The reference further teaches that As<sub>2</sub>O<sub>3</sub> and Sb<sub>2</sub>O<sub>3</sub> should not be contained in glasses produced in the float method but may be used in nonreducing conditions such as downdraw method. See column 7, lines 25-36.

Lautenschläger et al. differ from the instant claims by not teaching specific examples that lie within the compositional ranges nor ranges of glass components which are sufficiently specific to anticipate the claim limitations. However, the compositional ranges of Lautenschläger et al. overlap the compositional ranges of claims 64, 69-73, 75, and 78-80. Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the ranges of Lautenschläger et al. because overlapping ranges have been held to establish prima facie obviousness.

One of ordinary skill in the art would expect that a glass with overlapping compositional ranges would have the same viscosity at  $10^2$  as recited in claims 70, 72, 79, and 80.

Claims 61-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishizawa et al., U.S. Patent 6,169,047.

Art Unit: 1755

Nishizawa et al. teach an alkali-free glass consisting of 58.4-66 wt% SiO<sub>2</sub>, 5-12 wt% B<sub>2</sub>O<sub>3</sub>, 15.3-22 Al<sub>2</sub>O<sub>3</sub>, 0-8 wt% MgO, 0-9 wt% CaO, 3-12.5 wt% SrO, and 0-2 wt% BaO. See abstract of Nishizawa et al. Nishizawa et al. teach that glass can be used as a substrate for various displays and photomasks. See column 1, lines 15-18. Nishizawa et al. teach that PbO, As<sub>2</sub>O<sub>3</sub>, and Sb<sub>2</sub>O<sub>3</sub> are not incorporated except for unavoidable amounts. See column 4, lines 35-39. Nishizawa et al. teach that the glass may contain ZnO. See column 4, lines 31-34. The reference teaches that the glasses have a strain point of at least 640°C, coefficient of thermal expansion from 27 to 40x10<sup>-7</sup>/°C, and a density less than 2.60 g/cc. See column 4, lines 53-60. The reference teaches that the viscosity at 10<sup>2</sup> is at most 1720 °C and the viscosity at 10<sup>4</sup> is at most 1280. See Examples 30 and 31 of Table 4. The reference teaches that the glass is manufactured by the float process. See column 5, lines 23-27.

Nishizawa et al. differ from the instant claims by not teaching specific examples that lie within the compositional ranges nor ranges of glass components which are sufficiently specific to anticipate the claim limitations. However, the compositional ranges of Nishizawa et al. overlap the compositional ranges of claims 61-80. Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected from the overlapping portion of the ranges of Nishizawa et al. because overlapping ranges have been held to establish prima facie obviousness.

One of ordinary skill in the art would expect that glasses with overlapping compositional ranges would have overlapping ranges of properties as recited in claims 61, 66, 69, 77, 79, and 80.

***Response to Arguments***

Applicant's arguments in view of the rejection over Narita et al. see page 57, lines 6-12, filed 29 May 2003, with respect to new claims 61-80 have been fully considered and are persuasive. The rejection of claims 61-80 over Narita et al. has been withdrawn. Narita et al. does not teach nor suggest the properties as recited in the instant claims.

Applicant's arguments in view of the rejection over Watzke, see page 57, lines 6-12 and page 76, line 29 to page 77, line 1, filed 29 May 2003, with respect to new claims 61-80 have been fully considered and are persuasive. The rejection of new claims 61-80 over Watzke has been withdrawn. Watzke does not teach nor suggest the properties as recited in the instant claims.

Applicant's arguments in view of the rejection over Lautenschläger et al. see pages 82-89, filed 29 May 2003, with respect to new claims 61-63, 65-68, 74, 76, and 77 have been fully considered and are persuasive. The rejection of new claims 61-63, 65-68, 74, 76, and 77 over Lautenschläger et al. has been withdrawn. Lautenschläger et al. disclose that the glass is free of ZnO. See column 6, lines 27-29 of Lautenschläger et al.

Applicant's arguments in view of the rejection over Peuchert et al. filed 29 May 2003 have been fully considered but they are not persuasive.

The examiner acknowledges the Applicants probability arguments in regards to the rejections over Peuchert et al. For example, Applicants argue that based on the glass

Art Unit: 1755

composition of Peuchert et al. one of ordinary skill in the art has a very low probability of selecting a glass having overlapping ranges especially since the overlap is small especially for BaO. This is not found persuasive since Peuchert et al. does teach ranges of compositions, which overlap as well as ranges for properties that overlap. See above rejection. Therefore, Applicant's argument surrounding the probability are acknowledged but are not found persuasive, because the compositional ranges overlap and overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Applicant's arguments in view of the rejection of claims 64, 69-73, 75, and 78-80 over Lautenschläger et al. filed 29 May 2003 have been fully considered but they are not persuasive.

The examiner acknowledges the Applicants probability arguments in regards to the rejections over Lautenschläger et al. For example, Applicants argue that based on the glass composition of Lautenschläger et al. one of ordinary skill in the art has a very low probability of selecting a glass having overlapping ranges especially since the overlap is small especially for MgO, B<sub>2</sub>O<sub>3</sub>, and BaO. This is not found persuasive since Lautenschläger et al. does teach ranges of compositions, which overlap as well as ranges for properties that overlap. See above rejection. Therefore, Applicant's argument surrounding the probability are acknowledged but are not found persuasive, because the compositional ranges overlap and overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Applicants further argue that the glasses of Lautenschläger require amounts of ZrO<sub>2</sub>, SnO<sub>2</sub>, TiO<sub>2</sub>, and CeO<sub>2</sub>. This argument is not deemed persuasive because the Applicants present

Art Unit: 1755

claims do not limit the amounts of  $\text{ZrO}_2$ ,  $\text{SnO}_2$ ,  $\text{TiO}_2$ , and  $\text{CeO}_2$  in the composition in claims 64, 69-73, 75 and the compositional ranges overlap in claims 78-80.

Furthermore, the Applicants use “comprising” terminology, which allows for the addition of other components even in major amounts. See MPEP 2111.03 which states:

The transitional term “comprising”, which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.

The examiner acknowledges the Applicants probability arguments in regards to the rejections over Nishizawa et al. For example, Applicants argue that based on the glass composition of Nishizawa et al. one of ordinary skill in the art has a 1 in 970 probability of selecting a glass having overlapping ranges especially since the overlap is small especially for  $\text{MgO}$ ,  $\text{B}_2\text{O}_3$ , and  $\text{BaO}$ . This is not found persuasive since Nishizawa et al. does teach ranges of compositions, which overlap as well as ranges for properties that overlap. See above rejection and examples 30 and 31 of Nishizawa et al. Applicant's arguments in view of the rejection over Nishizawa et al. filed 29 May 2003 have been fully considered but they are not persuasive.

Applicants argue that Nishizawa et al. does not disclose a  $\text{ZnO}$  content that teaches or suggest the  $\text{ZnO}$  content of the instant claims. This is not found persuasive since Nishizawa et al. does teach ranges of compositions, which overlap as well as ranges for properties that overlap. See above rejection. Therefore, Applicant's argument is not found persuasive, because the compositional ranges overlap and overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05. Furthermore, Applicants argue that the examples of Nishizawa et al. do not teach the instant invention. This is deemed not persuasive since

Art Unit: 1755

Examples 30 and 31 teach the composition of claims 64, 69-73, 75, 78 and 80. Furthermore, a reference teaches all that is disclosed not just the examples or preferred embodiments. See MPEP 2123.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Bolden whose telephone number is 703-305-0124. The examiner can normally be reached on 8:30am to 6:00 pm with alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on 703-308-3823. The fax phone numbers for the

Art Unit: 1755

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EAB  
August 6, 2003



DAVID SAMPLE  
PRIMARY EXAMINER